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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/555,893	10/11/2006	Hiroshige Matsumoto	5267-0101PUS1	2716

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BIRCH STEWART KOLASCH & BIRCH  
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EXAMINER
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BELL, BRUCE F

ART UNIT	PAPER NUMBER
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1795

NOTIFICATION DATE	DELIVERY MODE
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03/25/2010

ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/555,893	<b>Applicant(s)</b> MATSUMOTO ET AL.	
	<b>Examiner</b> Bruce F. Bell	<b>Art Unit</b> 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 November 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☒ None of:
- ☒ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>11/7/05</u> . | 6) <input type="checkbox"/> Other: ____.  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is vague and indefinite with respect to whether the electrode includes the proton conductive electrolyte or the electrochemical cell includes the proton conductive electrolyte from the instant claim as set forth. Should applicant intend that the electrode includes the proton conductive electrolyte which the examiner suspects, then the examiner suggests deletion of the phrase "for an electrochemical cell" or any other manner that applicant may desire, as long as it is clear that the electrode contains the electrolyte and not the cell. Further, the claim is unclear as to whether the proton conductive electrolyte and the solid having hydrogen permeability are separate components or the same component. It appears from dependent claims that they are the same component.

Claims 2-20 depend on claim 1 and therefore have the same deficiency.

Correction and/or clarification are requested.

### ***Claim Objections***

2. Claims 19 and 20 are objected to because these claims are substantially duplicates of one another.

Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3, 6-8, 11, 14, 15, 18-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Pham et al (6103080).

Pham et al disclose an electrode/electrolyte having a proton conducting electrolyte based on perovskites of zirconia and ceria, such as that of  $\text{SrZr}_{1-x}\text{Ln}_x\text{O}_{3-\delta}$  where Ln is one of yttrium and calcium with yttrium being the preferred, and x being in the range of 0 to 0.2. The electrode is disclosed to be that of a precious metal of Pt, Pd, Ag, Au or their alloys. See col. 4, lines 39-61. Further a specific embodiment to the electrodes being PdAg and the electrolyte being  $\text{SrZr}_{0.9}\text{Y}_{0.1}\text{O}_{3-\delta}$  is disclosed. See col. 5, lines 23-25.

The prior art of Pham et al anticipates the applicants instant invention as shown above with respect to the instant claims as presented. Since the claims have been rejected for the reasons above in the 35 USC 112 – 2<sup>nd</sup> paragraph rejection, the examiner has used Pham et al to reject the applicants claims based on the cell having the proton conductive electrolyte and a hydrogen permeable electrode. Further, even though the prior art of Pham et al does not specifically state that the electrode is hydrogen permeable, the alloy used for the electrode in Pham et al is the same as that of the instant invention and therefore, the material alloy would inherently have this

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characteristic. Further, it is conventional in the art to use palladium alone or in a combination alloy as a hydrogen permeable material and hydrogen storage alloy. Therefore the prior art of Pham et al anticipates the applicants instant claims as presented.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Jacobson et al (2004/0115503).

Jacobson et al disclose an electrode/electrolyte combination of LSM-SrZrO/SrZrO for use in a fuel cell. See paragraph 0100. The fuel cell has a porous anode of a ceramic-metal composite and a porous cathode of a mixed ionically and electronically conductive metal oxide (MIEC). See paragraph 0008. The patent also shows an electrode of LSM-YSZ/YSZ (electrode/electrolyte). See paragraph 0030. The patent further discloses that an alloy of PdAg can be mixed with either LSM or YSZ in the invention. See paragraph 0076. The electrolyte of SrZrO<sub>3</sub> is shown to be proton conducting in the invention at paragraph 0097.

Jacobson et al anticipates the instant claims as shown by the disclosure above with respect to the instant claims as presented. The recitations in the dependent claims with respect to the hydrogen storage alloy and hydrogen permeability are met since the

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electrodes/electrolytes used in fuel cells are known to be used for their hydrogen permeability and further since PdAg is shown in the patent, this alloy is known to be conventionally used as well as other Pd alloys for the purpose of hydrogen storage and therefore, the patent inherently sets forth the electrode/electrolyte having such property. Further the recitations with respect to the percentages of the constituents used is inherent in the composition of the MIEC since the components are in a 1:1 ratio of Sr to Zr and if the mixture with PdAg is used, it appears that would also being in a 1:1 ratio and therefore would meet that percentage amount of Pd present. The MIEC compositions set forth in the patent are of perovskite structure as is known to those of ordinary skill in the art and therefore is inherently used in fuel cell materials. Therefore, the prior art of Jacobson et al anticipates the applicants instant invention as presented.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bruce F. Bell whose telephone number is 571-272-1296. The examiner can normally be reached on Monday-Friday 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571 272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BFB  
March 18, 2010

/Bruce F. Bell/  
Primary Examiner, Art Unit 1795